

REMARKS

In response to the Office Action mailed July 25, 2005, Applicant respectfully requests reconsideration. Claims 1-8 were previously pending in this application. Claims 1, 3, 6 and 8 have been amended. New claims 12-41 have been added to more fully define Applicant's contribution to the art. As a result, claims 1-8 and 12-41 are pending for examination with claims 1, 12 and 33 being independent claims. No new matter has been added.

Rejections under 35 U.S.C. §112

The Office Action rejected claims 1-8 under 35 U.S.C. §112 as being purportedly indefinite. The claims have been amended for clarity. Accordingly, withdrawal of this rejection is respectfully requested.

Double Patenting Rejection

The Office Action rejected claims 1-8 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of co-pending application 10/763,070. Without acceding to the propriety of this rejection, enclosed herewith is a Terminal Disclaimer to overcome this rejection.

Accordingly, withdrawal of this rejection is respectfully requested.

Objections to the Drawings

The Office Action objected to the drawings because Figures 1A, 1B and 2 did not include the legend "prior art." Figures 1A, 1B and 2 have been amended to include the legend "prior art."

Accordingly, withdrawal of this objection is respectfully requested.

Rejections Under 35 U.S.C. §102

The Office Action rejected claims 1-3, 5 and 6 under 35 U.S.C. §102 as being anticipated by Kobayashi (U.S. Patent No. 3,925,803). Applicant respectfully traverses this rejection.

Kobayashi is directed to a junction field effect transistor in which the source and drain are connected by rod-shaped semiconductor crystals (Abstract). The field effect transistor is formed of multiple rod-shaped crystals 3. As shown in FIG. 3, each rod-shaped crystal has a center of a first conductivity type and a shell of a different conductivity type. P-N junctions *j* extend along the length of each rod-shaped crystal between the core and the diffusion region 6 that surrounds the core (col. 3, lines 30). In FIG. 3, the P-N junctions *j* are shown to have an irregular shape due to the crystal growth and subsequent impurity diffusion (col. 3, lines 10-26).

By contrast, claim 1, as amended, recites, *inter alia*, a semiconductor component in which active junctions extend along at least one cylinder perpendicular to main surfaces of a semiconductor chip substantially across an entire thickness thereof, said at least one cylinder having a cross-section with a regularly undulated closed curve shape. Kobayashi does not teach or suggest at least one cylinder having a cross-section with a regularly undulated closed curve shape. Therefore, claim 1 patentably distinguishes over Kobayashi. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 2-8 depend from claim 1 and are therefore patentable for at least the same reasons.

New Claims

New claim 12 is related to a semiconductor component that includes a substrate, a first region of a first conductivity type, and a second region of a second conductivity type. The semiconductor component also includes a P-N junction between the first region and the second region along a surface that extends through the substrate. The surface has a cross-section with a wavy shape. Claim 12 patentably distinguishes over Kobayashi because Kobayashi does not teach or suggest a P-N junction between the first region and the second region along the surface that extends through the substrate, wherein the surface has a cross-section with a wavy shape.

Claims 13-32 depend from claim 12 and are therefore patentable for at least the same reasons.

New claim 33 relates to a semiconductor component in which active junctions extend along at least one surface that is perpendicular to main surfaces of a semiconductor chip and substantially across an entire thickness thereof, said at least one surface having a cross-section

parallel to the main surfaces, wherein the cross-section has a regularly undulating curve shape.
Claim 33 is patentable over Kobayashi because Kobayashi does not teach or suggest a cross-section having a regularly undulating curve shape.

Claims 34-41 depend from claim 33, and are therefore patentable for at least the same reasons.

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CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,
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